

# Video Technology VZ200 Personal Computer

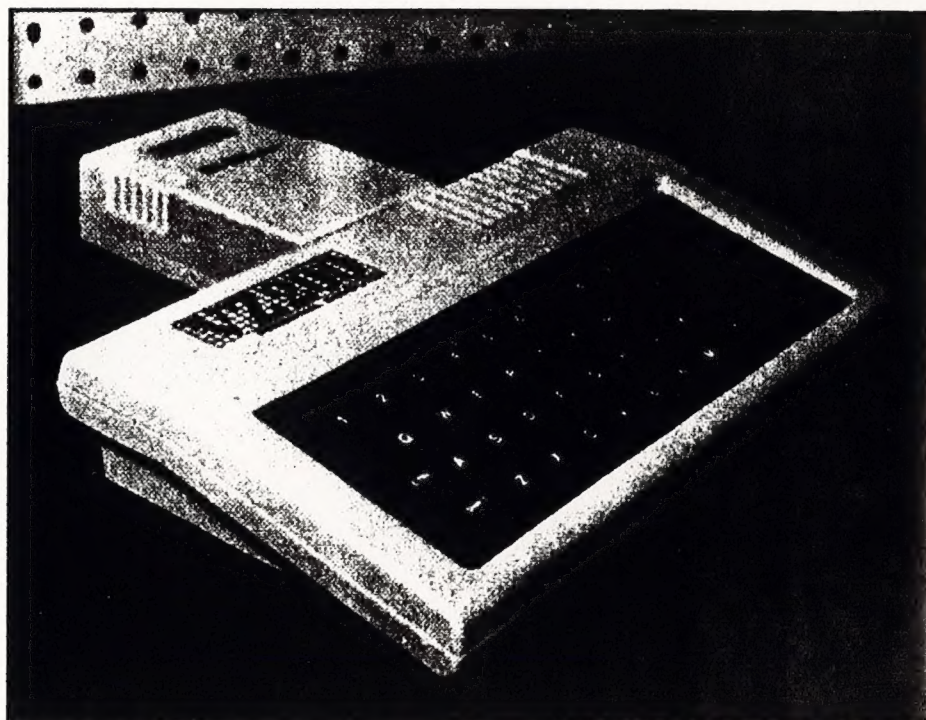
**David H. Ahl**

The Video Technology VZ200 is a compact microcomputer with a great deal of capability and many unexpected features at a very attractive price.

\* The VZ200 is based on the 6502 microprocessor, the same one found in the Apple, Commodore, and Atari computers. The 12K ROM memory includes the monitor and an excellent implementation of Microsoft Basic.

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*The VZ200 with 16K RAM memory pack.*

basic unit is a sparse 4K. Two plug-in expansion modules are available, one with 16K and the other with 64K. These modules plug into a slot on the back of the computer and extend out about 5.5".

The computer itself measures 11.4" x 6.3" x 2". Two-thirds of the top surface is occupied by a keyboard with 45 keys in four rows. The keys are "Chiclet" style rubber and have a very short throw. Touch typing is possible in only a rather limited way. Although key spacing is the same as on a regular typewriter, the rubberized keys have a different "feel." Much more disastrous for touch typing is the fact that there is no space bar; instead a space key is

found at the right end of the bottom row next to the period. This also means that there is only one shift key (at the left end of the bottom row). Several other keys do not have the expected characters; for example the question mark is on the L key.

On the brighter side, each key on the keyboard provides several functions in addition to typing a single letter, number, or character. All the Basic commands, keywords, and functions can be produced with a single keystroke by holding down a control or shift key while the key is pressed. This is very

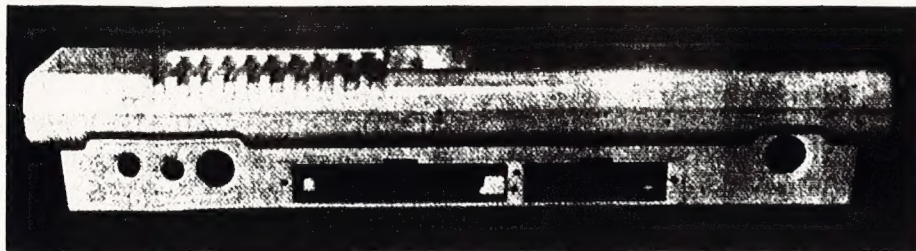
impressive. Most other computers which type Basic keywords with a single keystroke can produce only as many words as there are keys, i.e., one keyword per key. Each key on the VZ200, on the other hand, produces two Basic keywords as well as one or two graphics characters. So each key actually has five outputs: two Basic keywords, two graphics symbols, and an alphanumeric character.

When a key is pressed, it makes a short "beep" indicating one keystroke. If it is held down, it automatically repeats with a beep indicating each key entry.

\* Note: Error in CPU type !!

this device is a 6502





Four I/O connectors and two plug-in slots are on the back.

The top of the computer also has an on/off light. An on/off switch is recessed on the right side of the case.

#### Peripherals

The VZ200 has an interface to a standard cassette recorder which operates at a Baud rate of 600 bps. This is somewhat slower than other new computers which have rates up to 2400 bps; nevertheless it is twice as fast as machines of just a few years ago. A program that fills the entire 4K of memory with program code takes about 54 seconds to load; a 16K program takes four minutes to load. Bear in mind, however, that most 16K programs do not use 16K of code; much of the memory space is taken by dimensioned arrays and the like.

The manufacturer specifications note that a peripheral expansion bus is built-in, however, we are not quite sure what this means. It appears that expansion modules, which, presumably, can be connected to printers, modems, or other external devices, can be plugged into the back of the computer.

The VZ200 produces two forms of video output: a video signal for a monitor and RF output (on channel 33) for a TV set. It requires 9 volts DC at 800 ma; an AC adapter is included.

Output from the VZ200 can be in one of three modes: text, mixed graphics and

text, and high-resolution graphics. In text mode, the VZ200 produces 16 rows of 32 characters (upper case only). Characters can be displayed in regular or inverse video.

```

10 CLS:PRINT "KALEIDOSCOPE BY
DAVE AHL":PRINT
20 X=1: Y=1: XU=126: YU=62: Z=1
30 INPUT "ENTER 1,2, OR 3";I
40 I=.5*I: J=1
50 MODE (1)
60 X=X+I
70 Y=Y+J
80 COLOR (RND(B))
90 IF X>=XU OR X<=Z THEN I=-I:
SOUND 30,1
100 IF Y>=YU OR Y<=Z THEN J=-J:
SOUND 27,1
110 SET (X,Y)
120 GOTO 60

```

Set hi-res graphics mode  
Compute new x and y  
position

Tests to see if edge of  
screen has been reached.  
If so, reverse direction  
of bounce.

Draw new spot

Figure 1. Program produces a kaleidoscopic pattern of eight colors on the screen. The input parameter changes the incremental amount added to each successive horizontal or X position. Each time the leading edge of the pattern hits a border of the screen, a beep tone is sounded.

#### Graphics

In mixed mode, text resolution is doubled to 32 x 64 pixels. This is accomplished by dividing each text character

into four rectangles. Individual rectangles cannot be addressed. However, 64 graphics character codes define eight characters in eight colors. This gives every combination of the four rectangles in each character. These characters are called with CHR\$(128) to CHR\$(191). The eight colors are magenta, red, orange, buff, yellow, green, cyan, and blue. If you count black as a color, there are actually nine colors available.

In high-resolution graphics mode, individual pixels can be addressed on a 128 x 64 grid in each of eight colors. To turn on any location, the command SET (x,y) is used; RESET (x,y) turns off any

pixel; and POINT (x,y) examines whether a pixel is on or off. Figure 1 is a listing of a simple program that lets a ball bounce around the screen.

By means of the SOUND (P,T) command, 32 notes or pitches (P) are available which can be played over a wide range of time intervals (T).

#### On-Screen Editing

Full on-screen editing makes it a pleasure to program on the VZ200. To edit a line of code, it is not necessary to invoke an EDIT command or remember a set of editing commands as one must do on the TRS-80 Color Computer and many others. Instead, on the VZ200, the line to be edited is listed, by itself, with the whole program or with a group of lines. By using the four directional keys on the bottom right of the keyboard, the cursor is moved to the character to be changed. You type the change, move the cursor to the end of the line (remember, a key repeats by holding it down), and type RETURN. Voila! The change is made. On-screen editing can also use the DE-

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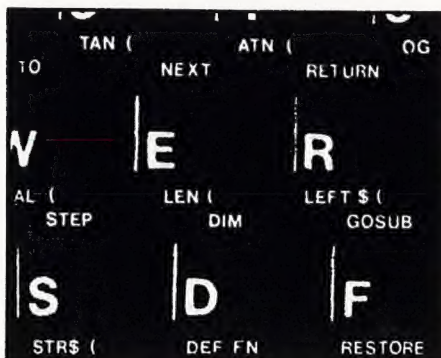
LETE, INSERT, and RUBOUT keys.

We experienced two small problems with on-screen editing. First, the cursor directional keys are activated by pressing the control key on the left and one of the directional keys on the right. It was all too easy to hit the shift key instead of the control key, but this is probably something that one gets used to after using the computer for a few days. The other problem was that after a while the editing buffer seems to overflow and further editing is not accepted. Admittedly, we were trying to push the computer over the brink and it is unlikely that this will be a problem in normal use.

#### Problems

Speaking of pushing the computer to the brink, we found several things from which there was no way to recover short of turning the computer off. Even BREAK (the equivalent of RESET on some other machines) failed to return control of the computer to the user. The most common irrecoverable condition was LLIST. This would normally list a program on the line printer. However, if no line printer is attached, the computer hangs. This is particularly bad because the rubberized keys tend to bounce a bit and it is very easy to type LLIST instead

of just plain LIST. If you have a long program in the computer and have to turn it off because it hangs up as we did four or five times, you are forgiven if you become a bit surly toward the machine.



Each key produces several outputs.

The surest cure is to use Control/4 to list a program. After a while, we learned to do this.

Other things that would hang the machine are all in the same family, in particular, trying to use a peripheral device that is not attached. In some cases, the VZ200 gave an error message, but in some others it went into never-never land.

We did not have an opportunity to try

any of the peripherals. The printer interface module, as mentioned earlier, plugs into the back of the computer. It measures 5.5" x 2" and provides a Centronics parallel signal. The Video Technology printer appears to be a Seikosha unit which we have previously found to be a satisfactory, cost effective printer.

Video Technology also promises a full line of software, however, we will reserve judgment on it until we actually see some of the packages in operation.

#### Summary

All in all, the Video Technology folks in Hong Kong have done an excellent job producing a versatile small computer. We are impressed with the excellent implementation of Microsoft Basic, full on-screen editing, repeat keys, and easy-to-use graphics features. The idiosyncrasies were a bit annoying, but owners will get used to them and will probably not notice them after a week or two of operation. Bottom line: the VZ200 is a great value for the suggested price of under \$100.

Video Technology (U.S.) Inc., 2633 Greenleaf, Elk Grove Village, IL 60007.

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